

PENDING CLAIMS AND STATUS THEREOF

Claims 1-4 canceled.

5. (New) An apparatus comprising:

a processor unit capable of executing one or more first instructions;

a digital signal processor operative with the central processing unit, the digital signal processor capable of executing one or more second instructions;

an instruction set having first instructions and second instructions; and

the central processing unit and the digital signal processor constructed and arranged to form a programmer model having the digital signal processor having two or more working registers, program memory storing one or more of the instructions in the instruction set, a program counter, and at least one execution unit capable of executing one or more of the instructions in the instruction set.

6. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of MAC, MSC, MP, MPYN and ED.

7. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of NOP, CALLW, RCALLW, GOTOW, BRAW, CALL, DO, DOW, REPEAT, REPEATW, BOA, BOB, BSA, and BSB.

8. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of SUBR, SUBRLS, MOVL, BOV, BC, BZ, BN, BLE, BLT, BLEU, BRA, BNOV, BNC, BNZ, BNN, BGT, BGE, and BGTU.

9. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of ADD, ADDLS, ADDC, ADDCLS, SUB, SUBLS, SUBB, SUBBLS, AND, ANDLS, XOR, XORLS, IOR, IORLS, and MOV.

10. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of BTST, BTSTS, BTSTW, BTSS, BTSC, BSETF, BCLRF, BTGF, BTSTF, BRSTSF, BSW, BTFSS and BTFSC.

11. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of ADDLW, ADDCLW, SUBLW, SUBBLW, ANDLW, XORLW, IORLW, ADDWF, ADDCWF, SUBWF, SUBBWF, ANDWF, XORWF, IORWF, MOVWF, MULU, MULUS, MULSU, MULS, TBLRDL, TBLRDH, TBLWTL, TBLWTH, MULWF, SUBFW, SUBBFW and MOVF.

12. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of MOVSAC, SFTAC, SFTACK, ADDAC, LAC, ADDAB, NEGAB, SUBAB, SAC and SRAC.

13. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of SL, LSR, ASR, RLNC, RLC, RRNC, RRC, SLF, LSRF, ASRF, RLNCF, RLCF, RRNCF, RRCF, SLW, and ASRW.

14. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of CP(LS), CPB(LS), CPF0, CPF, CPFB, INC, INC2, DEC, DEC2, NEG, COM, INCF, INCF2, DECF, DECF2, NEGF, COMF, CLRF and SETF.

15. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of PUSH, POP, LNK, ULNK, DISI, DAW, EXCH, SWAP, CLRWDT, RESET, ITCH, SCRATCH and NOPR.

16. (New) The apparatus of claim 5, wherein the instruction set includes one or more instructions selected from the group consisting of ADD, ADDAB, ADDAC, ADDC, ADDCLS, ADDCLW, ADDCWF, ADDLS, ADDLW, ADDWF, AND, ANDLS, ANDLW, ANDWF, ASR, ASRF, ASRW, BC, BCLRF, BGE, BGT, BGTU, BLE, BLEU, BLT, BN, BNC, BNN, BNOV, BNZ, BOA, BOB, BOV, BRA, BRAW, BRSTSF, BSA, BSB, BSETF, BSW, BTFSC, BTFSS, BTGF, BTSC, BTSS, BTST, BTSTF, BTSTS, BTSTW, BZ, CALL, CALLW, CLRF, CLRWDT, COM, COMF, CP(LS), CPB(LS), CPF, CPF0, CPFB, DAW, DEC, DEC2, DECF, DECF2, DISI, DO, DOW, ED, EXCH, GOTOW, INC, INC2, INCF, INCF2, IOR, IORLS, IORLW, IORWF, ITCH, LAC, LNK, LSR, LSRF, MAC, MOV, MOVF, MOVL, MOVSAC, MOVWF, MP, MPYN, MSC, MULS, MULSU, MULU, MULUS, MULWF, NEG, NEGAB, NEGF, NOP, NOPR, POP, PUSH, RCALLW, REPEAT, REPEATW, RESET, RLC, RLCF, RLNC, RLNCF, RRC, RRCF, RRNC, RRNCF, SAC, SCRATCH, SETF, SFTAC, SFTACK, SL, SLF, SLW, SRAC, SUB, SUBAB, SUBB, SUBBFW, SUBBLS, SUBBLW, SUBBWF, SUBFW, SUBLS, SUBLW, SUBR, SUBRLS, SUBWF, SWAP, TBLRDH, TBLRDL, TBLWTH, TBLWTL, ULNK, XOR, XORLS, XORLW and XORWF.

17. (New) The apparatus of claim 5, wherein the instruction set includes two or more instructions selected from the group consisting of ADD, ADDAB, ADDAC, ADDC, ADDCLS, ADDCLW, ADDCWF, ADDLS, ADDLW, ADDWF, AND, ANDLS, ANDLW, ANDWF, ASR, ASRF, ASRW, BC, BCLRF, BGE, BGT, BGTU, BLE, BLEU, BLT, BN, BNC, BNN, BNOV, BNZ, BOA, BOB, BOV, BRA, BRAW, BRSTSF, BSA, BSB, BSETF, BSW, BTFSC, BTFSS, BTGF, BTSC, BTSS, BTST, BTSTF, BTSTS, BTSTW, BZ, CALL, CALLW, CLRF, CLRWDT, COM, COMF, CP(LS), CPB(LS), CPF, CPF0, CPFB, DAW, DEC, DEC2, DECF, DECF2, DISI, DO, DOW, ED, EXCH, GOTOW, INC, INC2, INCF, INCF2, IOR, IORLS, IORLW, IORWF, ITCH, LAC, LNK, LSR, LSRF, MAC, MOV, MOVF, MOVL, MOVSAC, MOVWF, MP, MPYN, MSC, MULS, MULSU, MULU, MULUS, MULWF, NEG, NEGAB, NEGF, NOP, NOPR, POP, PUSH, RCALLW, REPEAT, REPEATW, RESET, RLC, RLCF, RLNC, RLNCF, RRC, RRCF, RRNC, RRNCF, SAC, SCRATCH, SETF, SFTAC, SFTACK, SL, SLF, SLW, SRAC, SUB, SUBAB, SUBB, SUBBFW, SUBBLS, SUBBLW, SUBBWF, SUBFW, SUBLS, SUBLW, SUBR, SUBRLS, SUBWF, SWAP, TBLRDH, TBLRDL, TBLWTH, TBLWTL, ULNK, XOR, XORLS, XORLW and XORWF.

18. (New) The apparatus of claim 5, wherein the instruction set includes three or more instructions selected from the group consisting of ADD, ADDAB, ADDAC, ADDC, ADDCLS, ADDCLW, ADDCWF, ADDLS, ADDLW, ADDWF, AND, ANDLS, ANDLW, ANDWF, ASR, ASRF, ASRW, BC, BCLRF, BGE, BGT, BGTU, BLE, BLEU, BLT, BN, BNC, BNN, BNOV, BNZ, BOA, BOB, BOV, BRA, BRAW, BRSTSF, BSA, BSB, BSETF, BSW, BTFSC, BTFSS, BTGF, BTSC, BTSS, BTST, BTSTF, BTSTS, BTSTW, BZ, CALL, CALLW, CLRF, CLRWDT, COM, COMF, CP(LS), CPB(LS), CPF, CPF0, CPFB, DAW, DEC, DEC2, DECF, DECF2, DISI, DO, DOW, ED, EXCH, GOTOW, INC, INC2, INCF, INCF2, IOR, IORLS, IORLW, IORWF, ITCH, LAC, LNK, LSR, LSRF, MAC, MOV, MOVF, MOVL, MOVSAC, MOVWF, MP, MPYN, MSC, MULS, MULSU, MULU, MULUS, MULWF, NEG, NEGAB, NEGF, NOP, NOPR, POP, PUSH, RCALLW, REPEAT, REPEATW, RESET, RLC, RLCF, RLNC, RLNCF, RRC, RRCF, RRNC, RRNCF, SAC, SCRATCH, SETF, SFTAC, SFTACK, SL, SLF, SLW, SRAC, SUB, SUBAB, SUBB, SUBBFW, SUBBLS, SUBBLW, SUBBWF, SUBFW, SUBLS, SUBLW, SUBR, SUBRLS, SUBWF, SWAP, TBLRDH, TBLRDL, TBLWTH, TBLWTL, ULNK, XOR, XORLS, XORLW and XORWF.

19. (New) The apparatus of claim 5, wherein the instruction set includes four or more instructions selected from the group consisting of ADD, ADDAB, ADDAC, ADDC, ADDCLS, ADDCLW, ADDCWF, ADDLS, ADDLW, ADDWF, AND, ANDLS, ANDLW, ANDWF, ASR, ASRF, ASRW, BC, BCLRF, BGE, BGT, BGTU, BLE, BLEU, BLT, BN, BNC, BNN, BNOV, BNZ, BOA, BOB, BOV, BRA, BRAW, BRSTSF, BSA, BSB, BSETF, BSW, BTFSC, BTFSS, BTGF, BTSC, BTSS, BTST, BTSTF, BTSTS, BTSTW, BZ, CALL, CALLW, CLRF, CLRWDT, COM, COMF, CP(LS), CPB(LS), CPF, CPF0, CPFB, DAW, DEC, DEC2, DECF, DECF2, DISI, DO, DOW, ED, EXCH, GOTOW, INC, INC2, INCF, INCF2, IOR, IORLS, IORLW, IORWF, ITCH, LAC, LNK, LSR, LSRF, MAC, MOV, MOVF, MOVL, MOVSAC, MOVWF, MP, MPYN, MSC, MULS, MULSU, MULU, MULUS, MULWF, NEG, NEGAB, NEGF, NOP, NOPR, POP, PUSH, RCALLW, REPEAT, REPEATW, RESET, RLC, RLCF, RLNC, RLNCF, RRC, RRCF, RRNC, RRNCF, SAC, SCRATCH, SETF, SFTAC, SFTACK, SL, SLF, SLW, SRAC, SUB, SUBAB, SUBB, SUBBFW, SUBBLS, SUBBLW, SUBBWF, SUBFW, SUBLS, SUBLW, SUBR, SUBRLS, SUBWF, SWAP, TBLRDH, TBLRDL, TBLWTH, TBLWTL, ULNK, XOR, XORLS, XORLW and XORWF.

20. (New) The apparatus of claim 5, wherein the instruction set includes five or more instructions selected from the group consisting of ADD, ADDAB, ADDAC, ADDC, ADDCLS, ADDCLW, ADDCWF, ADDLS, ADDLW, ADDWF, AND, ANDLS, ANDLW, ANDWF, ASR, ASRF, ASRW, BC, BCLRF, BGE, BGT, BGTU, BLE, BLEU, BLT, BN, BNC, BNN, BNOV, BNZ, BOA, BOB, BOV, BRA, BRAW, BRSTSF, BSA, BSB, BSETF, BSW, BTFSC, BTFSS, BTGF, BTSC, BTSS, BTST, BTSTF, BTSTS, BTSTW, BZ, CALL, CALLW, CLRF, CLRWDT, COM, COMF, CP(LS), CPB(LS), CPF, CPF0, CPFB, DAW, DEC, DEC2, DECF, DECF2, DISI, DO, DOW, ED, EXCH, GOTOW, INC, INC2, INCF, INCF2, IOR, IORLS, IORLW, IORWF, ITCH, LAC, LNK, LSR, LSRF, MAC, MOV, MOVF, MOVL, MOVSAC, MOVWF, MP, MPYN, MSC, MULS, MULSU, MULU, MULUS, MULWF, NEG, NEGAB, NEGF, NOP, NOPR, POP, PUSH, RCALLW, REPEAT, REPEATW, RESET, RLC, RLCF, RLNC, RLNCF, RRC, RRCF, RRNC, RRNCF, SAC, SCRATCH, SETF, SFTAC, SFTACK, SL, SLF, SLW, SRAC, SUB, SUBAB, SUBB, SUBBFW, SUBBLS, SUBBLW, SUBBWF, SUBFW, SUBLS, SUBLW, SUBR, SUBRLS, SUBWF, SWAP, TBLRDH, TBLRDL, TBLWTH, TBLWTL, ULNK, XOR, XORLS, XORLW and XORWF.